CASE REPORTS

PATENT DUCTUS ARTERIOSUS IN A WOMAN AGED 72 YEARS

BY

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Patent ductus arteriosus is as a rule incompatible with great longevity. In Abbott's (1936) series of 1000 cases of congenital cardiac disease, the mean age of the 92 with uncomplicated patent ductus was 24 years, the oldest being 66 years. Josefson (1897) and White (1928) found patent ductus at necropsy in patients of 66 years and 65 years and 9 months respectively; in White's patient the diagnosis was made two years before death. Walker and Ellis (1941) described a man with this condition, who was still, at the age of 73 years, in good health; he died at the age of 78 but there was no necropsy (White, personal communication).

By means of cardiac catheterization in a woman, aged 71, we have recently been able to verify the diagnosis of patent ductus arteriosus made clinically 41 years ago. This patient is still living and is able to attend to her household duties.

The patient, M.S., born in 1879, was treated in Bergen City Hospital in 1909 (the chief physician at that time being Dr. Klaus Hanssen); the diagnosis was thought to be patent ductus arteriosus. She complained of palpitation of the heart and dyspnœa on exertion. On examination a continuous buzzing sound was heard over the second left interspace, and the second pulmonary sound was accentuated. A pulse tracing showed a rapid pulse and extrasystoles on exertion (Fig. 1). Since then she has been in relatively good health, apart from occasional extrasystoles and dyspnœa on exertion. For several years her ankles have been swollen, especially in connection with attacks of coughing and expectoration. Since the fall of 1948 she has been treated by her physician for congestive heart failure. She was admitted to this hospital in January, 1949. She was then found to be suffering from auricular fibrillation; her blood pressure was 135/70 in the right arm and 120/80 in the left; her pulse was of Corrigan type. In the second and third left interspace was heard a continuous systolic-diastolic " machinery " murmur (Fig. 1). The liver was felt just below the costal arch; there was œdema of the ankles. The venous pressure, 40 mm., was normal, and the circulation time somewhat prolonged—24 seconds for the first and 65 seconds for the last taste of

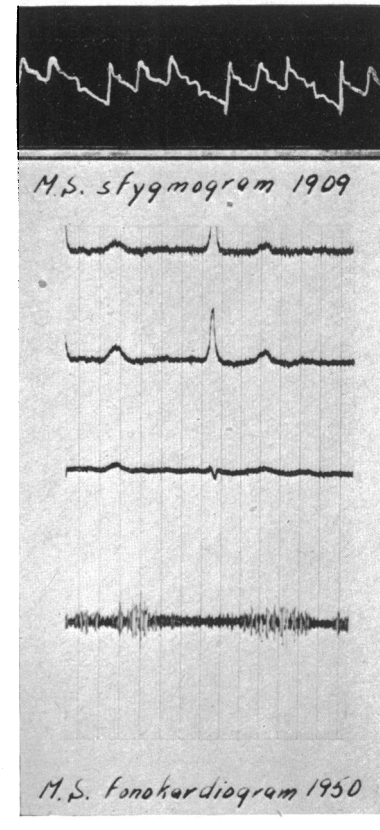

FIG. 1.—Sphygmogram taken in 1909 and phonocardiogram of the patient taken recently.

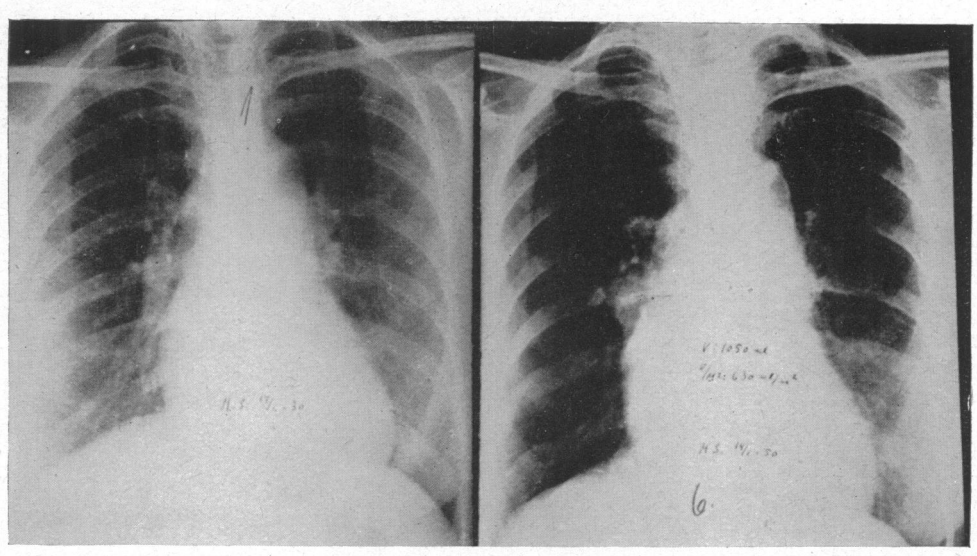

FIG. 2.—Teleradiograms of the heart taken in 1930 and 1950.

decholin. Roentgenological examination of the heart in 1930 and in 1950 showed a moderate enlargement of the left ventricle and a dilated pulmonary artery (Fig. 2). Since then she has been treated for her congestive heart failure by digitalis, a salt-poor diet, and injections of mercurial diuretics. In January 1950 she was readmitted with acute pneumonia. During this stay a cardiac catheterization was made, with the following findings.

Systemic flow	*Pulmonary flow*	*Shunt*
2·9 litre/min. 1·7 litre/sq.m./min.	6 litre/min. 3·5 litre/sq.m./min.	3·1 (52%)

PRESSURES IN MM. HG

Pulmonary artery	*Right ventricle*	*Right auricle*
44/22 (mean 28)	40/+2 (mean 12)	+2

Discussion

These findings may throw some light on the circulatory changes in long-standing patent ductus arteriosus. The most remarkable finding is the low systemic flow. In a study in catheterization of the heart in cases of patent ductus treated in this hospital (Storstein *et al.*) we found a mean cardiac index in 16 patients of 3·9; the lowest figure being 3 and the highest 5·5. None of these patients showed any sign of congestive heart failure. The low cardiac index may be taken as an indication of a " forward failure," where the left ventricle is unable to maintain a sufficient cardiac output to the systemic circulation.

In our 72-year-old patient there was a moderate hypertension in the pulmonary circulation. In our series of catheterization in patent ductus the pressure in the pulmonary artery was normal in 5 of 12 patients. The patient with the highest pulmonary pressure—75/44 (mean pressure 62)—had a deformity of the chest with severe kyphosis, which may have been partially responsible for the high pressure. The second of the patients with severe hypertension presumably had a ventricular septal defect. It is surprising that the pressure in the pulmonary artery in our 71-year-old patient was not higher. One would have expected that a long-standing increased blood flow through the pulmonary circulation would provoke a pulmonary hypertension (Cournand *et al.*, 1949), partly

by provoking arteriosclerosis in the pulmonary vessels. In our patient of 72 there were radiological signs of sclerosis in the pulmonary artery.

From this case we see that it is possible to live with a patent ductus up to the eighth decade in relatively good health. Our patient is still, despite her moderate congestive heart failure, able to attend to her household duties, keeping house for her three nephews, at the age of 72 years.

Summary

A case of patent ductus arteriosus in a woman of 72 years where the diagnosis was made 41 years earlier, is reported, together with the findings at cardiac catheterization. This is, so far as we know, the oldest verified case.

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